Steering Committee
of the Imperial Valley Study Group
Minutes of August 24, 2005 Meeting

In attendance: Jonathan Woldemariam, SDG&E; Juan Carlos Sandoval, David Barajas, Carrie Downey, IID; Vince Signorotti, CalEnergy; Jesse Ante, CPUC; Dave Olsen, CEERT/CEC; Dana Cabbell, SCE; and by phone, John Kyei, CAISO, for Richard Cashdollar. The meeting convened at 10:35 AM and adjourned at 3:35 PM. Minutes were recorded by Dave Olsen.

Minutes of the August 9, 2005 Steering Committee meeting were approved.

LADWP Participation: LADWP has been exploring a connection to IID for some time, and recently informed the IVSG that it would like to begin participating in joint planning efforts. DWP has studied a 500 kV line from the proposed Indian Hills substation to the LADWP Victorville or Upland stations. Such a line would enable DWP to access Imperial Valley geothermal, and other generation from the east. John Kyei reported that the ISO has a joint LADWP-ISO transmission study of an Indian Hills-Upland connection, and that this line was shown to relieve pressure at Devers. Dana Cabbell suggested that incorporating such a connection to DWP could serve as an alternative to upgrading Path 42. It is too late to undertake new power flow studies of the IVSG recommended transmission plan with the LADWP connection included. The IVSG report should thus say that joint studies may be needed later.

DWP has been participating in the IVSG Permitting Work Group (PWG) and may be one of the parties to develop the IVSG programmatic EIR as now contemplated by the PWG.

500 kV Connection: SDG&E is developing plans of service for two final alternative configurations of its 500 kV project: IV substation to San Diego Central; and IV to SD Central to interconnection with the SCE on the Serrano-Valley line. The latter alternative is referred to as the "full loop" option, in that it enables flows back to the east/Arizona. The connection at SerVal is not required for the export of renewable energy from the Imperial Valley, but it may provide reliability and other regional flexibility benefits. Specifying these benefits would require further study. John Kyei reviewed production simulations done by ISO comparing the IV-SD Central and the Full Loop alternatives. These indicate that the Full Loop alternative slightly reduces WECC annual production cost, congestion and losses, relative to the IV-SD Central alternative.

The San Felipe substation is not included in either of SDG&E's final two alternatives for the 500 kV line. Connection from the IID system to SDG&E at a San Felipe station is not required for IVSG Phase 1, but is required for Phase 2, in approximately 2016. Joint IID-SDG&E ownership of the section of the 500 kV line from the Imperial Valley substation to San Felipe is being discussed by the parties. The IVSG report should identify development of a San Felipe substation as subject to the mutual agreement of SDG&E and IID.

Ownership and Cost Allocation: the IVSG report should say that these issues will be addressed as new IV generation is added in each Phase.

Economic Evaluation: John reviewed the production cost simulations he ran on each of the IVSG study alternatives. These indicate that adding 2,200 MW of new geothermal generation and the transmission in each of the various alternatives reduces WECC annual production cost, and congestion, by significant amounts. These simulations were designed to compare transmission alternatives, not to justify investment decisions. After discussion, the committee concluded that the IVSG report does not need to include a full economic evaluation of our recommended development plan, for several reasons: 1) full economic evaluation, which would entail significant additional work, is not expected of a conceptual plan. 2) with a connection to LADWP now being considered, the structure and timing of the phasing could change, making economic analysis premature. 3) SDG&E is working on an economic analysis of the 500 kV project, a major component of the IVSG plan, using the TEAM methodology; this includes the addition of 2,200 MW of geothermal generation in 2015. The results of that analysis, expected to be competed in October 2005, may help indicate the costs and benefits of the IVSG development plan.

Development Phases and Triggers: The IVSG report should say that a 500 kV connection to the IID system will ultimately be required to support the export of the full 2,200 MW. However, the SDG&E 500 kV line may not be required for Phase 1 or even Phase 2. If, for example, the first geothermal PPAs are with LADWP/SCPPA or other customers not served by the ISO, then a lower voltage connection to SDG&E could suffice.

IID reported that its system could be upgraded in sync with each new geothermal power plant, such that the new transmission would not need to be approved in advance of interconnection requests for those plants. The transmission service request for Salton Sea Unit 7, e.g., would require upgrading Highline-El Centro, to deliver the 215 MW to the IV substation. But IID needs this upgrade to serve local load, and it would likely fund this upgrade itself. The transmission service request for Salton Sea Unit 8 would then require upgrading El Centro-Dixieland-IV substation. This would make all 645 MW of Phase 1 geothermal output deliverable from Midway to the IV substation.

Juan Carlos said the IVSG report should point out that IID has already begun work on the infrastructure necessary to connect future geothermal plants (Salton Sea Units 7-9 and beyond) at its Midway and new Banister substations. (IID's Banister substation, for example, was included in CalEnergy's application to the CEC for Salton Sea Unit 6). The report should also note that the IID system can accommodate Phase 1 upgrades cost-effectively because some of the transmission built for its system 20 years ago was over-designed, and it is now taking advantage of those assets.

The IID Board can approve the necessary environmental studies, for each phase, on its own. Most of the upgrades are to existing lines, so will likely require Environmental Assessments, not EIRs. Carrie Downey reported that the IVSG Permitting Work Group (PWG) would recommend development of a Programmatic EIR to structure the permitting of the overall generation-transmission development project. IID, SDG&E, CalEnergy and LADWP would be the four main proponents. The PWG schedule will call for an MOU among these four parties to be signed within two months. IID approval for the upgrades could then be expected 6-8 months after IID hires its environmental contractor for the necessary studies.

IID upgrades necessary for **Phase 2** would be triggered by a transmission service request (and the close of financing) for SS Unit 10. This would require a tear-down and rebuild of Midway-Highline, to increase its capacity from 800 MW to 1600 MW TTC. IID Phase 2 upgrades might be funded jointly by IID (for the portion necessary to serve local load), CalEnergy/the generators, and third party investors. Further upgrades to support the remaining Phase 2-3 generation can also be built incrementally. Juan Carlos and David Barajas agreed to develop a list of each of the upgrades, in sequence, to support Phases 1-3. This is due for the IVSG report draft by Sept. 1.

For **Phase 3**, one of the key questions concerns the need to upgrade Path 42. If SDG&E extends its 500kV line from San Diego Central to the SCE system at SerVal, this would inject flows directly into Orange County and perhaps avoiding adding flows across Path 42. A new LADWP line to Upland, from a connection to IID at Indian Hills might also avoid new flows S-N across the SCE-owned portion of Path 42. The IVSG report will identify the further studies needed to provide more insight into this situation. Dana Cabbell agreed to draft a section of the report identifying what events would trigger an upgrade of Path 42, and which parties should pay for upgrades due to inadvertent flow across the path.

> After our Steering Committee meeting, John Kyei looked at the unintended flow on Path 42 due to IVSG Phase 2 and Phase 3 plans. Here are the results:
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> 1. 1290 MW Geothermal Output scheduled to San Diego (Phase 2)---Path 42 Unscheduled flow is 60 MW. With Central-SerVal 500 kV line in service, there will be no unscheduled flow on Path 42.
> 2. 2200 MW Geothermal Output scheduled to San Diego (Phase 3)---Path 42 Unscheduled flow is 210 MW. With Central-SerVal 500 kV line in service, the unscheduled flow on Path 42 will be reduced to 125 MW.
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> (John increased San Diego load in the Light Autumn case to accommodate the extra import).

Tariff and Funding Issues: We reviewed Jonathan's draft of Chapter 7. Spreading the cost of the required transmission as broadly as possible can help to keep the delivered cost of the geothermal power down and so facilitate the power sales necessary to drive the overall generation-transmission development. The cost of the SDG&E 500 kV line can be spread across all users of the ISO grid. Because IID is not an ISO member and is not FERC-jurisdictional, the costs of its network upgrades would not ordinarily be able to be spread across the ISO. IID and the IVSG parties could request that the ISO find IID upgrades justified as part of a larger transmission plan and as a means of spreading the cost of renewables/meeting RPS goals across the state. If the ISO agreed, it could then direct its PTOs to fund the upgrades. Because this would mean directing the PTOs to spend money on a non-ISO participant's grid, it appears to be a difficult and uncertain possibility.

The SDG&E 500kV line is reliability-driven; it will get built regardless of geothermal development. Many of the IID upgrades are planned to meet internal system needs over the next ten-20 years. So the core of the IVSG plan includes two sets of network upgrades that would happen anyway, without geothermal development. But several of the IID upgrades could be undertaken sooner, in order to support geothermal development. Another funding approach might be to charge generators the cost of advancing the planned upgrades by some number of years.

Jonathan agreed to rewrite this chapter, in light of the discussion and with additional input from IID.

IVSG Report Chapter 6, Next Steps: The report should recommend specific steps to expedite and streamline aspects of permitting/approval processes. IID, CalEnergy and SDG&E will each draft a list of such actions, along with a brief explanation of how these reforms would save time and why they are appropriate. Suggestions discussed in the meeting included:

- Structure the IVSG report so that it can serve as the work plan for development of the Programmatic EIR.
- Use CEC public review of the IVSG report (likely in the IEPR proceeding) to be counted as one of the public meetings necessary in the CEC plant-siting approval process. This could save one month or more in this approval process.
- The CEC plant-siting process requires investigating alternative lines/connections. Request that the CEC accept the IVSG transmission studies as satisfying this requirement.
- Specific amendments of CEQA.
- Request the CEC to specify situations in which it could overrule CEC staff to provide flexibility in interpretation of CEQA requirements.
- Use review of the IVSG report in the IEPR proceeding to help make the case for the need for the SDG&E 500 kV line.
- Use the IVSG report to get pre-approval of new transmission from both state and federal agencies.
- Request the CPUC to eliminate the current duplication of environmental study efforts, so that only one environmental report is required (rather than one produced by proponents and one by the CPUC).
- Recommend that CPCN applications be bifurcated into a Need Determination section, filed first; and an environmental study.
- Request the CPUC to hire its environmental contractor before the IOU files its CPCN application (or at the time the proponent files the Need Determination portion of the CPCN application).

Physical production of the report: CalEnergy and SDG&E will each see if they can provide a clerical person to format the report (charts, tables, page numbering, etc.).

- We agreed the report will be available primarily as pdf files on the IVSG website.
- The PSLF plot files are so voluminous that they should be not be posted, but should be available on request.
- We agreed to include diagrams of the routings/upgrades involved in Phases 1-3, and that these diagrams should not include any geographic reference. IID agreed to produce these diagrams. It will modify its existing diagrams to remove the Colorado River, Salton Sea and any other geographic marker.
- IID volunteered to produce a limited number of paper copies using the IID print shop.

All writing assignments agreed to in the meeting are due Sept. 1. We will circulate the next drafts in red-line/Track Changes format.

Next Meetings/Key Dates:

September 8, 11:00 AM - 12:30 PM. Possible phone conference call to discuss new sections of the draft report before it is circulated for public comment. We'll determine whether this meeting is necessary via e-mail exchange. Call-in info to be provided.

September 12: Draft of the IVSG report circulated for comment (to STEP, SDG&E and IVSG lists).

September 15, 1:00-5:00 PM. Full Study Group meeting, to take comment on our draft report. Location: SANDAG, 401 B Street, 8th Floor, San Diego.